U.S. Fusion Energy Sciences Program

Analysis of President's FY 2003 Budget Proposal for Fusion Energy Sciences

Fusion Program Leaders Conference Call

February 5, 2002

www.ofes.fusion.doe.gov

Excellent Science in Support of Attractive Energy

FY 2003 Fusion Energy Sciences Congressional Budget

	FY 2001	FY 2002	FY 2003
Science	131.4	137.7	142.5
Facility Operations	77.0	74.1	78.7
Enabling R&D	33.6	35.7	36.1
OFES Total	*242.0**	*247.5*	*257.3*
DIII-D	51.9	50.9	55.6
C-Mod	18.0	17.6	22.3
NSTX	27.5	26.8	33.1
NCSX (MIE)	0.0	0.0	11.0

*Without SBIR

FY 2003 FES Congressional Budget Highlights

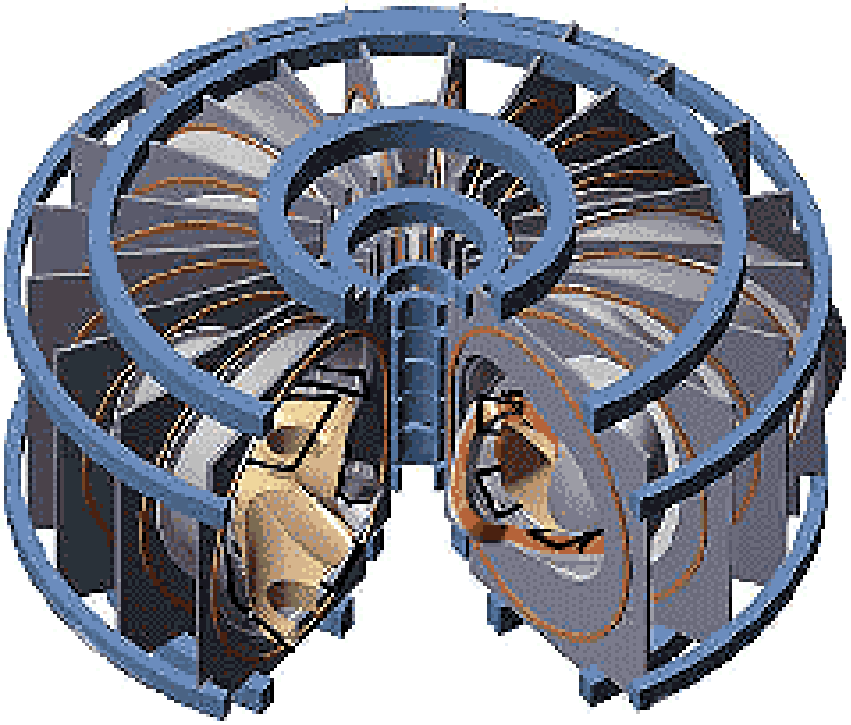
- Budget increase of $9.8 million + TFTR D&D completion in FY 2002
- Maintain research elements at FY 2002 level
- Increase operations at major facilities
  - Near doubling compared to FY 2002
  - Run each facility 21 weeks, 85% of full single shift operations
- Initiate National Compact Stellarator Experiment project ($11 million)
- Pay housekeeping expenses
  - Waste management at labs ($3.4 million)
  - Complete TSTA clean up ($3.0 million)
  - ORNL Fusion Energy Division move to X-10 ($1.0 million)

A New Initiative in Innovative Confinement Concepts
National Compact Stellarator Experiment (NCSX)

Fusion Science opportunity: flexibility in…

- o 3D plasma shape
- o Rotational transform and flow shear
- o Helical ripple

⇒ advances toroidal physics understanding



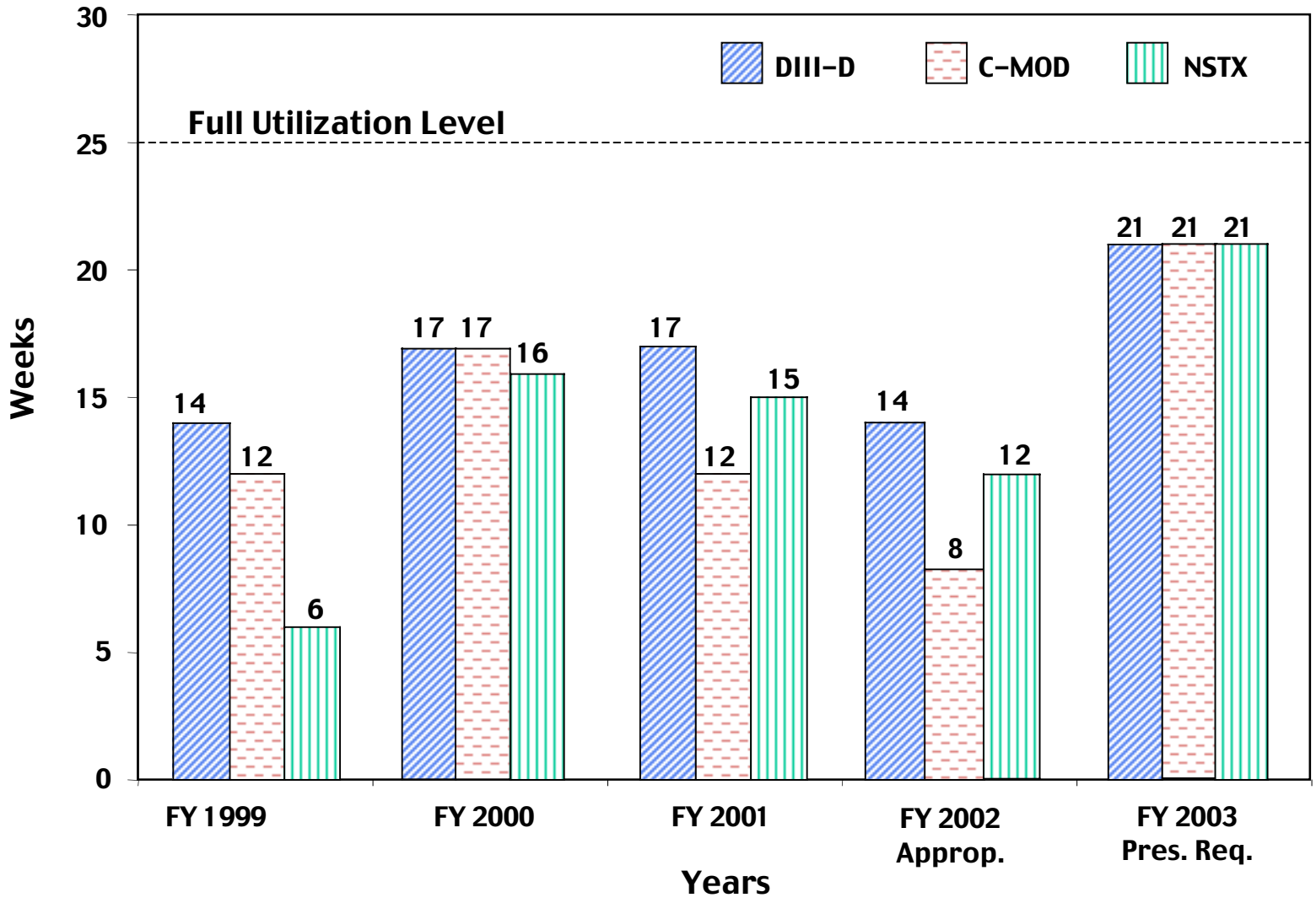
Fusion Energy vision: steady state with…

- o No need for current drive or feedback control of instabilities
- o Tokamak-like power density
- o No disruptions

Project plan…

- o Conceptual design review: May, 2002
- o Fabrication: FY 2003-2007
- o Preliminary cost estimate: approx. $69M (as-spent)

Major Fusion Facilities Operating Times



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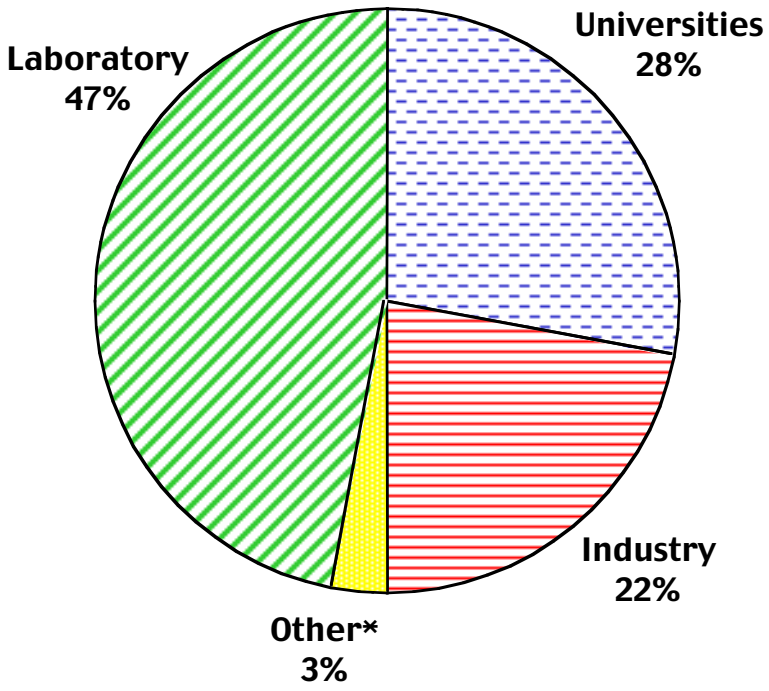
Fusion Energy Sciences Funding Distribution

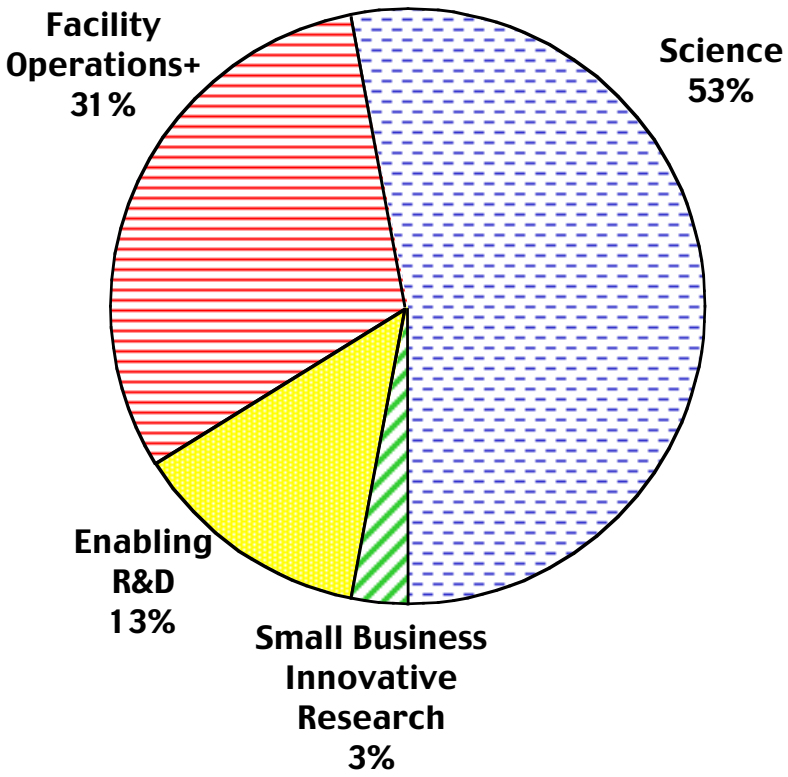
FY 2003 President's Request
$257.3M

Institution Types



*NSF/NIST/NAS/AF
Undesignated

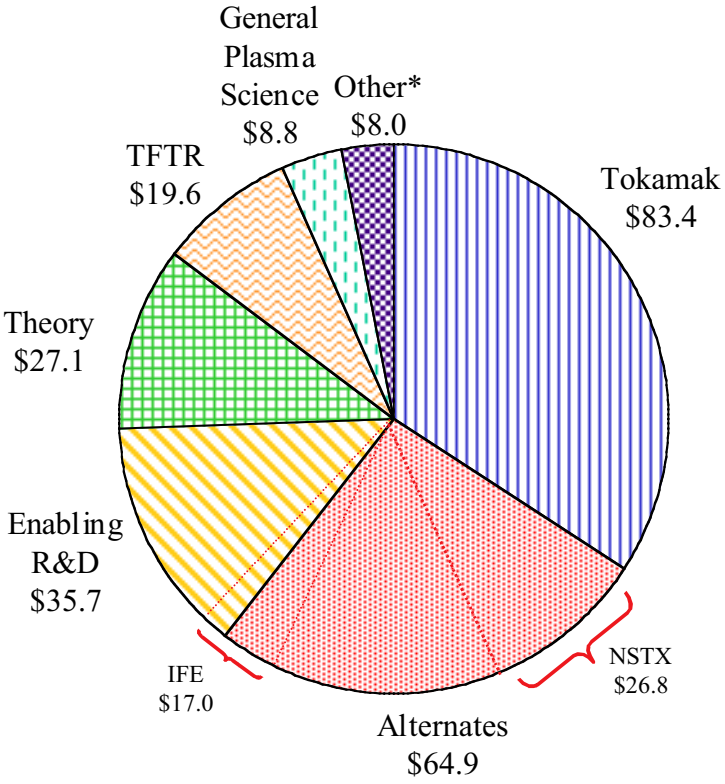
Functions



+Includes NCSX Project

Fusion Energy Sciences Budget

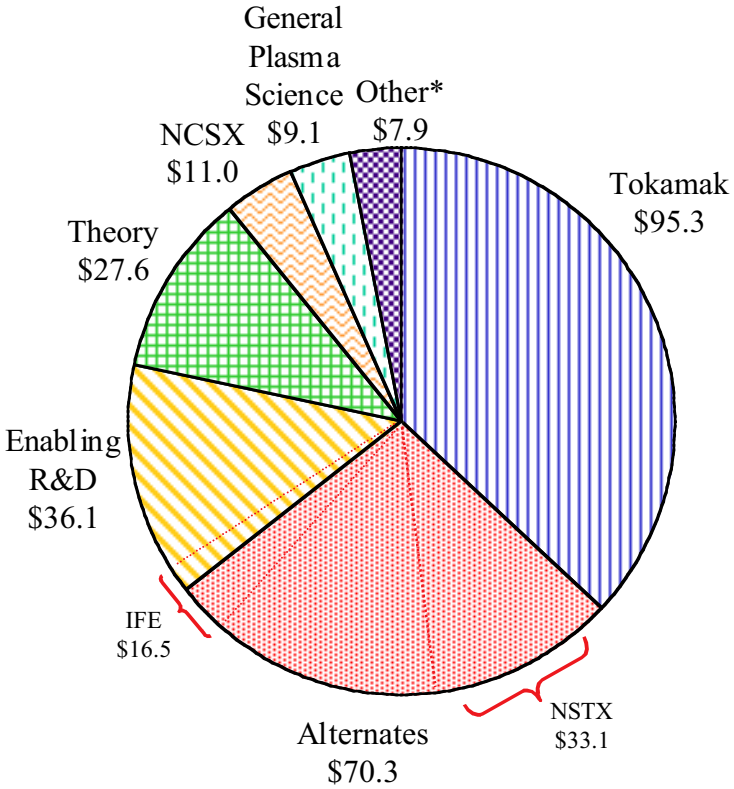
FY 2002
December Financial Plan



$247.5 M

* SBIR/STTR
GPP/GPE

FY 2003
Congressional



$257.3 M

* SBIR/STTR
GPP/GPE

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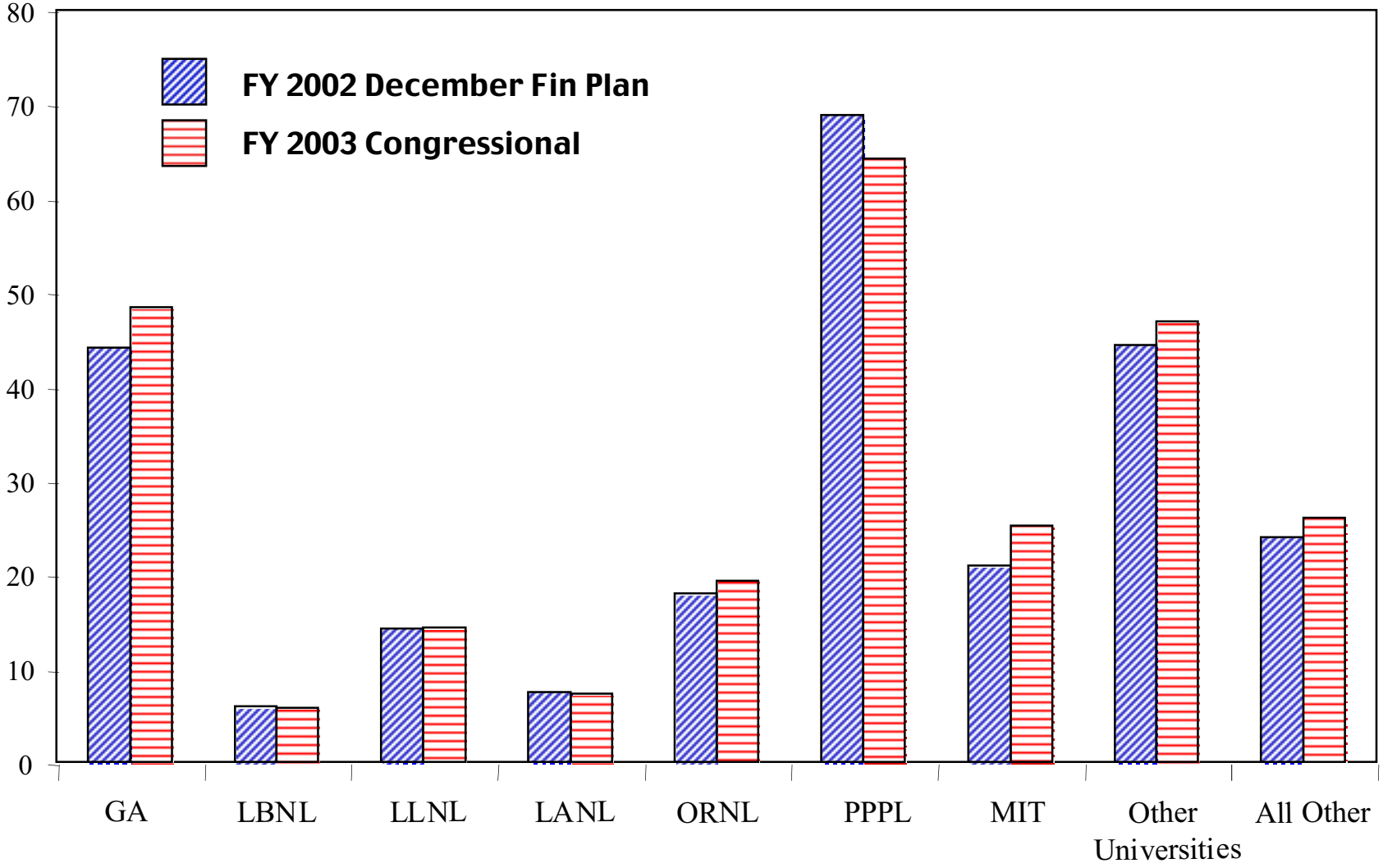
Fusion Energy Sciences Funding by Institution

($ in Millions)



Fusion Energy Sciences Budget by Institution

($ in Millions)

Institution	FY 2002 Dec Fin Plan	FY 2003 Congressional
General Atomics	44.1	48.3
Lawrence Berkeley National Lab	5.9	5.8
Lawrence Livermore National Lab	14.3	14.4
Los Alamos National Lab	7.4	7.3
Oak Ridge National Laboratory	17.9	19.3
Princeton Plasma Physics Lab	68.8	64.1
Massachusetts Institute of Technology	20.9	25.2
Other Universities	44.3	46.9
All Other	23.9	26.0
Total	***247.5***	***257.3***